C11 Service guide

Category of technical document: Instruction book

version：A

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1. General Characteristics

Overview

C11 support GSM/WCDMA/HSDPA，which equipped with Android Jelly Bean JS. CM11 Main board has rich multimedia functions including IPS display, CTP, MMS,64 polyphonies, multimedia playback, FM, stereo earphone , Bluetooth, Wifi ,GPS, and USB connection, support motion sensor, ALS/PS sensor, dual camera, micro SD ,dual SIM card, Capacitive Touch Panel, etc. business card-shaped phone manager, clock/alarm clock, calculator ,senor games and other practical Applications.

This document Involved key components description, electrical characteristics and Troubleshooting.

Introduction to Main Functions

System functional characteristics:

- Compatible with，GSM900/1800/1900，WCDMA 2100/900（optional）;
- 4.5"/ 16.7M color TF TLCD;
- Multipoint Capacitive Touch Panel;
- 4Gb ROM +1GMb RAM;
- 3.5" Audio Jack and Loud speaker;
- 8M pixel Camera ;
- Support motion sensor;
- Support GPS、BT、FM、WIFI;
- Support ALS/PS;
- Support Fuel gauge;
- Android Jelly Bean JS ,Support third-party software extensions.

Technical Indicators

Performance Indicators

- Normal operating condition:-10℃~55℃;
- Storage temperature:-10℃~60℃;
- Relative humidity:10%～95%;
- Receiving sensitivity:≤-105dBm;
- Standby time:200~300hr ;
- Battery capacity:2000mAh;
- Transmitting power:2W/1W;
- Power supply voltage:3.4-4.2V;

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- MP3 playing duration:12~18hr(with Audio Jack);
- Video playing duration :about 5~6hr;
- Conversation duration: 8 hr.

Power Consumption Indicators

- Standby current of motherboard: < 3.5mA;
- Conversation current: 2G<250mA;3G<500mA;
- Full bright in a poor light(keyboard light on): <400mA;
- Semi-bright in a poor light (keyboard light off): <300mA;
- Shutdown current:<100uA;
- Dial-in vibration:<400mA;
- Dial-in ring tone:<430mA;
- Dial-in vibration + ring tone:<450mA;
- Short message service:<150mA;
- Camera Preview: <350mA;
- MP3 playing: maximum volume < 40mA(with Audio Jack);
- Video Playback:<400mA.

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2. Quick Spec

Operating System	Android Jelly Bean (Can be upgraded to : TBD)	
UI Version	Android Default	
Processor	MTK6589 Quad core 1.2 GHz or above	
Memory	ROM 4GB eMMC, RAM 1GB LPDDR2	
Display	4.5" IPS LCD	
	Resolution: qHD 960x540 16:9 ratio	
	Color: 16.7M	
	Brightness: up to 300 nits (with Touch panel)	
Touch	Touch Lens: Glass/Film/Film Type,	
	Cover Surface Hardness: 7H,	
	4 color printing (Black, Logo, Sensor hole)	
	Capacitive, Multi Touch function (up to true 4 point)	
Dimensions	131 x 68 x 9.9 mm	
Weight	Under 139 g (with battery)	
Radio	MEDIATEK MT6167	
	HSPA/WCDMA: 900 / 2100 MHz	
	GSM/GPRS/EDGE: 850MHz / 900MHz / 1800MHz / 1900MHz	
	HSDPA up to 42Mbps , HSUPA up to 11Mbps	
	GPRS Class 12 /EDGE Class 12	
	MMS, SMS, Email, IM	
	AWS band layout reserved	No
	AU Band (850/2100) layout reserved	No
Connectivity	Wireless LAN	IEEE 802.11b/g/n (support WAPI in China SKU only)
	GPS	Yes, with A-GPS support and SUPL
	BlueTooth	Bluetooth® 3.0 with EDR
	FM	Yes
	Micro-SD slot	Yes, up to 32GB, SDHC 2.0 compatible
	Micro-USB	Yes
	Audio output	3.5mm standard audio jack
	HDMI	No
	Acer ClearFi	No
Camera	Main 8M AF with LED flashlight	

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	Front 2M FF	
HD Voice	Microphone	Dual, for noise cancellation
	Echo Cancelation	Yes,
	WB-AMR	Yes
Audio	Dolby Mobile	No
	SRS	Yes
	Speaker	Dual, 106dB within 5cm distance
Ergonomic Design	1. Capacitive, Multi Touch function (up to true 4 point) 2. Function Buttons : Front: Capacitive touch key : Back/Home/Menu with backlight 3. Side keys: - Volume Up/Down - Power Button 4. Dual Speaker : 106dB within 5mm distance	
LED Indication	One LED (Red / Green/ Blue Color) Indicator scenario: Charging / Missed Call / Voice Mail / New Message / Low Battery	
Sensors	Ambient L-sensor	Yes
	G-sensor	Yes
	e-Compass	Yes
	Proximity Sensor	Yes
	Gyro-sensor	No
NFC	No	
Dual SIM slot	Yes, also need Single SIM SKU support	
Text Entry	Google virtual keyboard/ Swype	
Messaging	Universal inbox	SMS, MMS, email
	Email	Gmail
	IM	Gtalk

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Web	Browser	Android Browser, Chrome Browser
	Search	Google Search
Entertainment	Video, Music	Google Default
	Music streaming	No
	Video streaming	YouTube
	Social network	Facebook
Productivity	Push mail	Gmail
	PC sync	Google cloud sync
	Cloud sync	Google Cloud
	Office	Polaris Office Editor
Location-based Services	A-GPS	Satellite Data Update
	Maps & directions	Google Maps, Latitude, Street View
Online App. Store	Google play store	
RCSE	No	
Power	Voltage range/frequency: 100 ~ 240V AC, 50/60 Hz DC output: 5V and 1A	
Battery	■ Rechargeable/Replaceable polymer battery ■ Capacity: 2,000 mAh ■ 2G Stand-by > 400 hours ■ 2G Talk Time > 8 hours ■ 3G Stand-by > 450 hours ■ 3G Talk Time > 9 hours ■ Quick Charge: 80% in 1 hour.	
Packing List	Device, AC adaptor, USB cable, 3.5mm headset, Battery, quick start guide, warranty card, safety Screen Protector film	
Optional Accessories	TBD	
Certification	CE / NCC / GCF / GCF OTA / BQB / WiFi logo / WHQL / CTS / CTA (China SKU only)	
	HAC No	
Green Design	Must Comply with acer 707-0008-V5 Guidance of Restricted Substances procedure	
	RoHS/WEEE	Yes

PVC Free	Yes
Halogens Free (FCS date after 2012.1.1, must comply with HF)	No

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3. Description about Circuit

Block Diagram of Operating Principle

The system architecture of 2MV521 is illustrated in Figure 2-1:

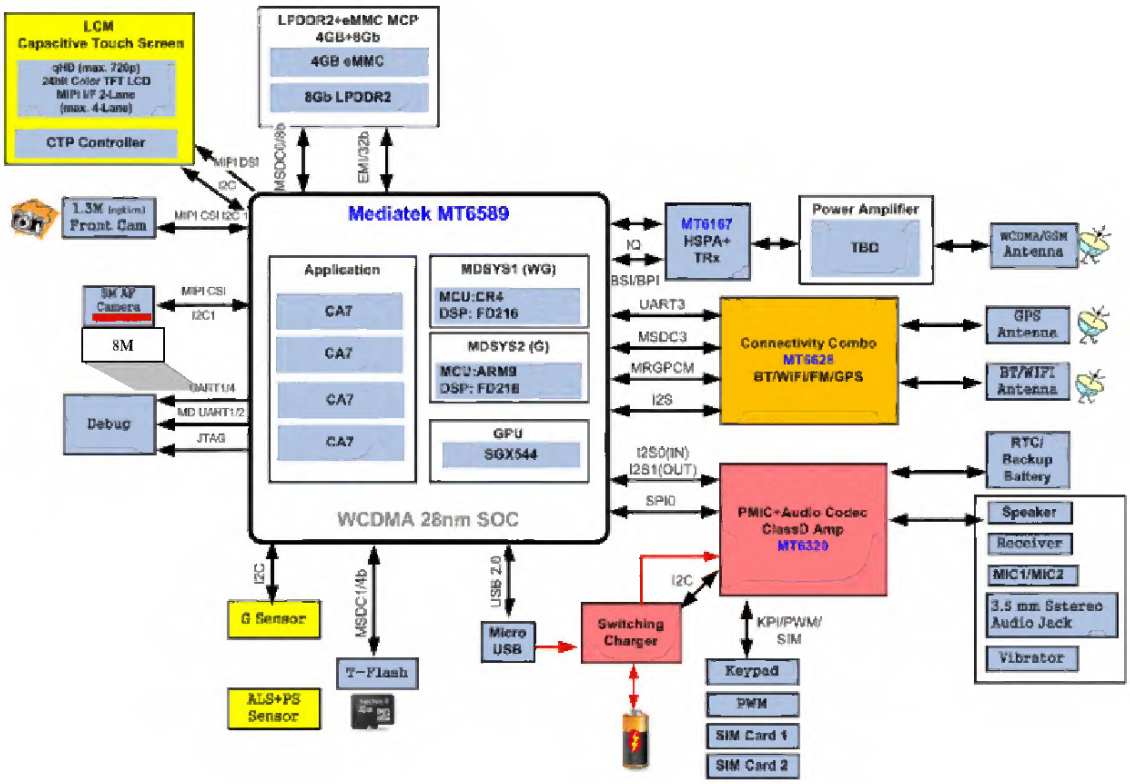

Figure 2-1 System architecture of 2MV521

4. ID

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5. Acer software upgrade tool guide

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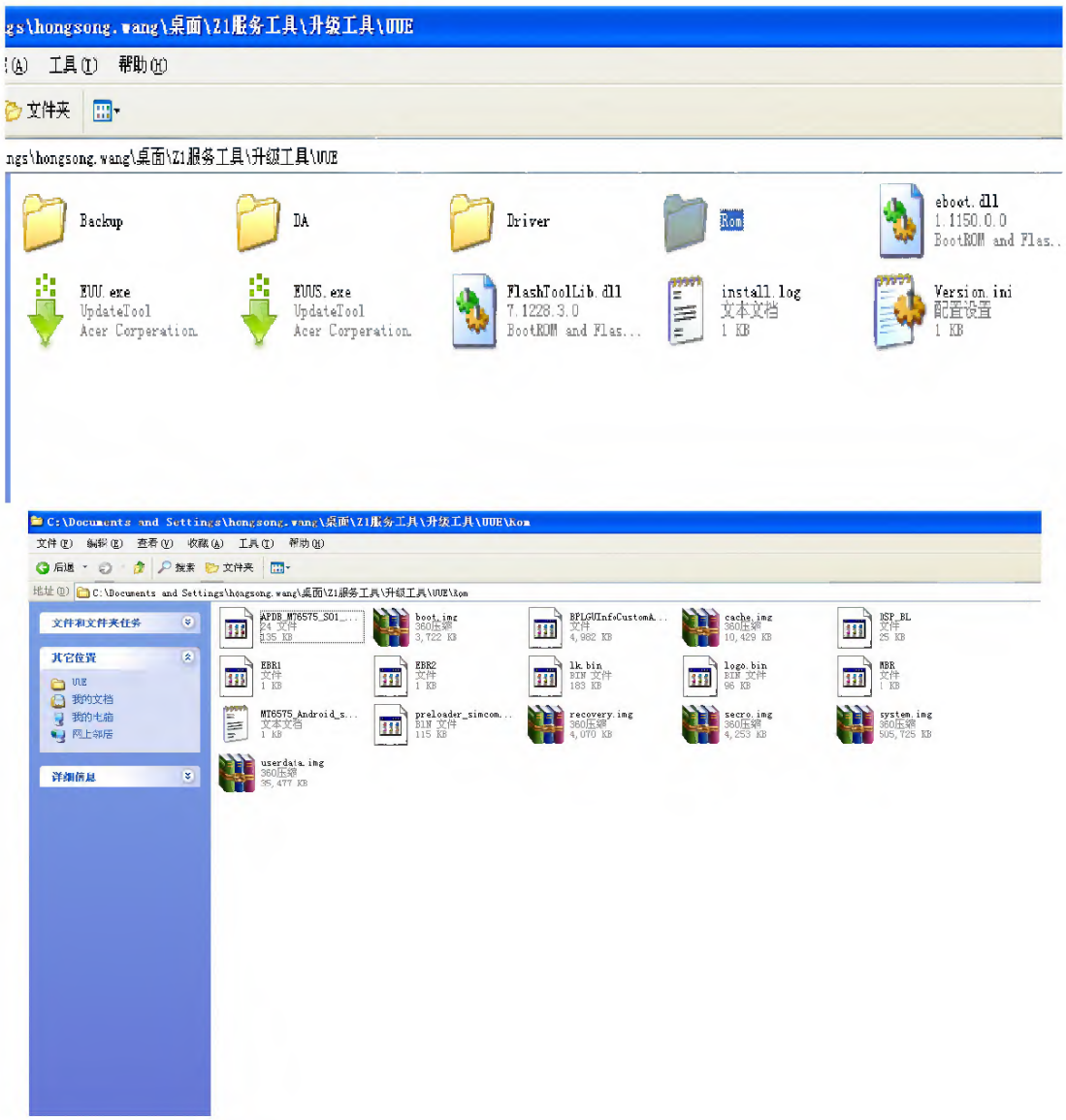
1、Before download, Please configure the configuration file.

Detailed steps:

（1.）Double-click the ROM folder，copy the software to the ROM folder under the root directory.



(2.) Double-click the “Version. Ini ” icon，and input the software Version number, than save

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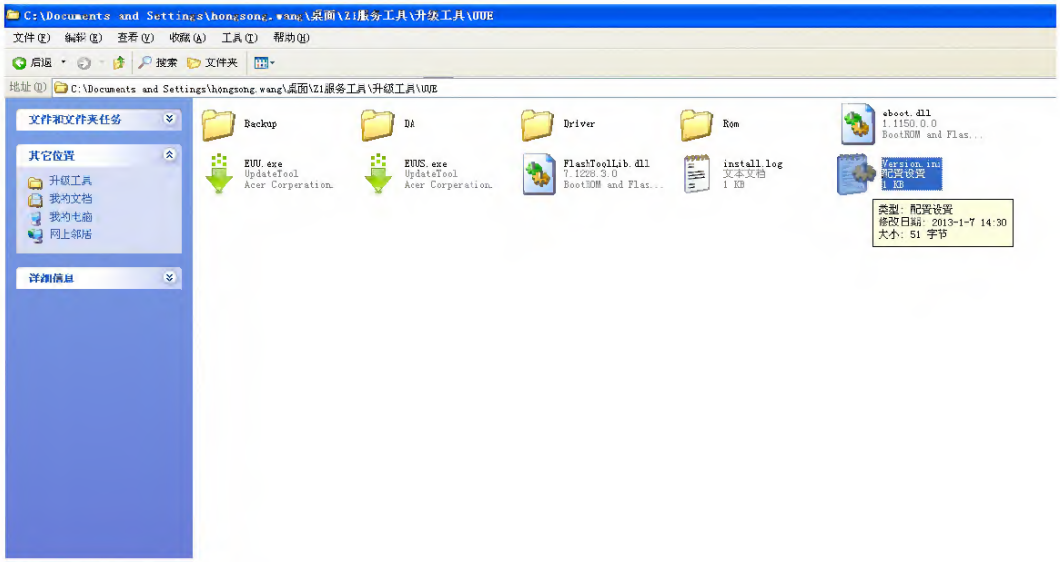
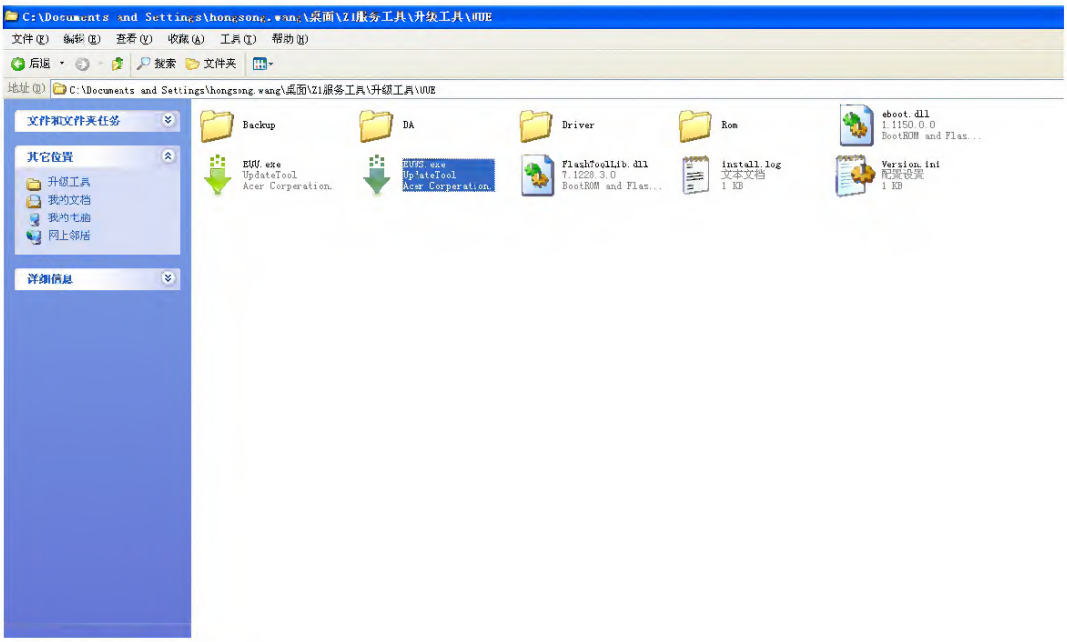
text and exit.



2. This software has two different upgrade tools. Using EUUS tools upgrade will erase user data, EUU update tool don't clear user date, according your need to select. The same method of operation of the two upgrade tools, we use EUU tools as an example, please follow the picture.
(1.) Double-click the "EUU.exe" icon, follow the pictures.



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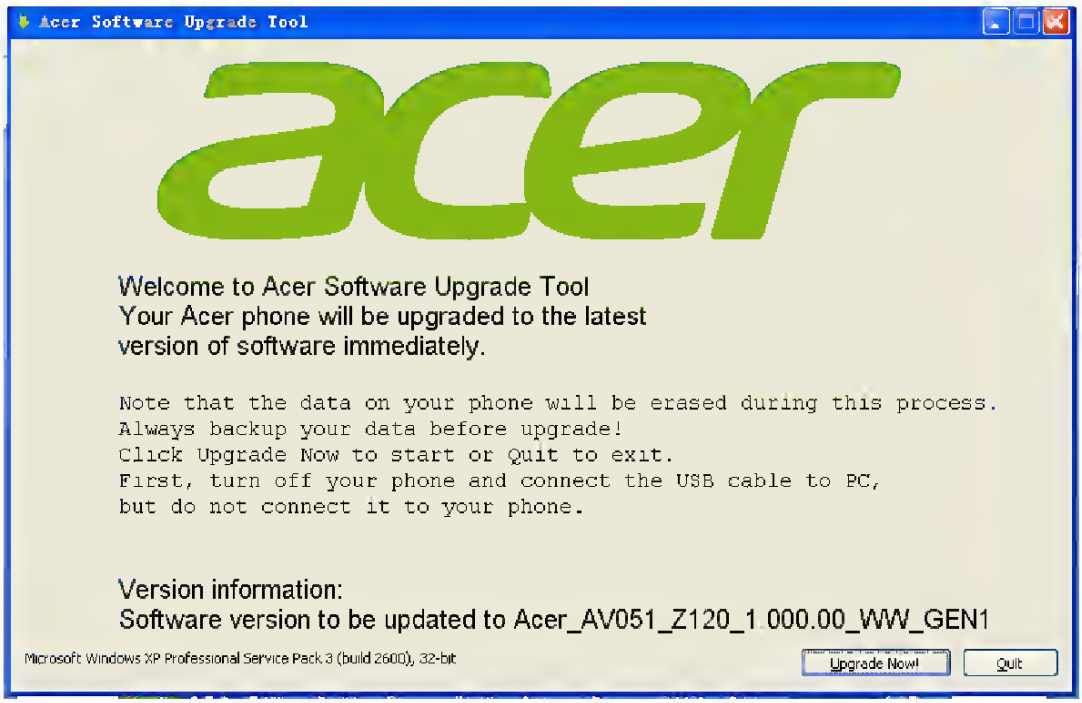
Acer Software Upgrade Tool
Welcome to Acer Software Upgrade Tool
Your Acer phone will be upgraded to the latest
version of software immediately.
Note that the data on your phone will be erased during this process.
Always backup your data before upgrade!
Click Upgrade Now to start or Quit to exit.
First, turn off your phone and connect the USB cable to PC,
but do not connect it to your phone.
Version information:
Software version to be updated to Acer_AV051_Z120_1 000.00_WW_GEN1
Microsoft Windows XP Professional Service Pack 3 (build 2600), 32-bit
Upgrade Now!
Quit

(2.) First, turn off your phone and connect the USB cable to pc, but don't connect it to your phone. Then click Upgrade button, install USB driver.

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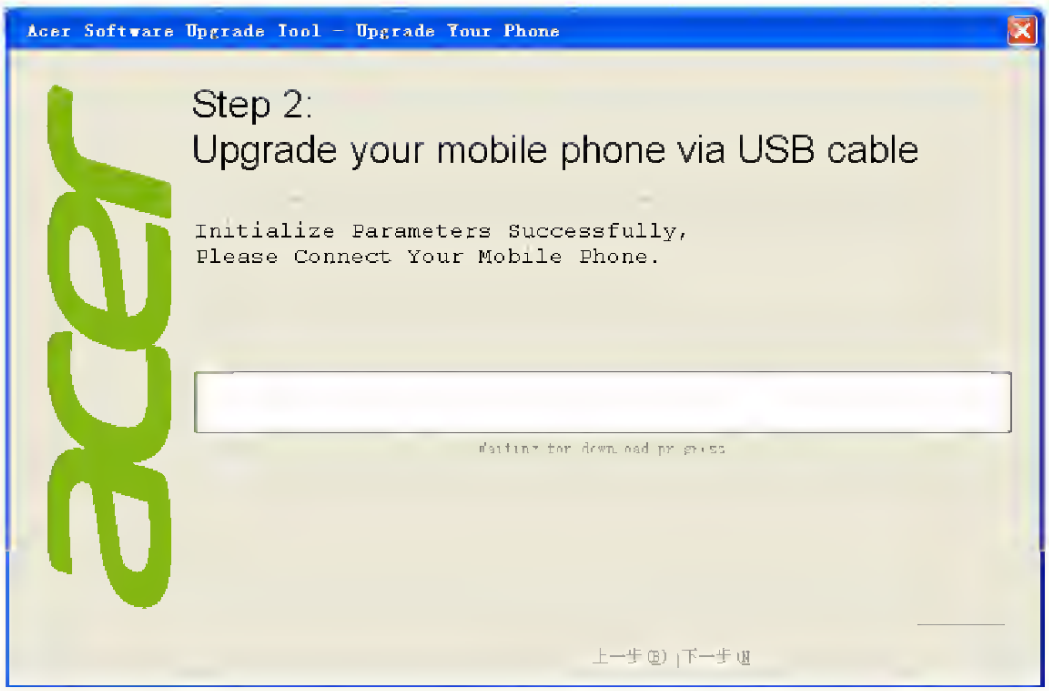
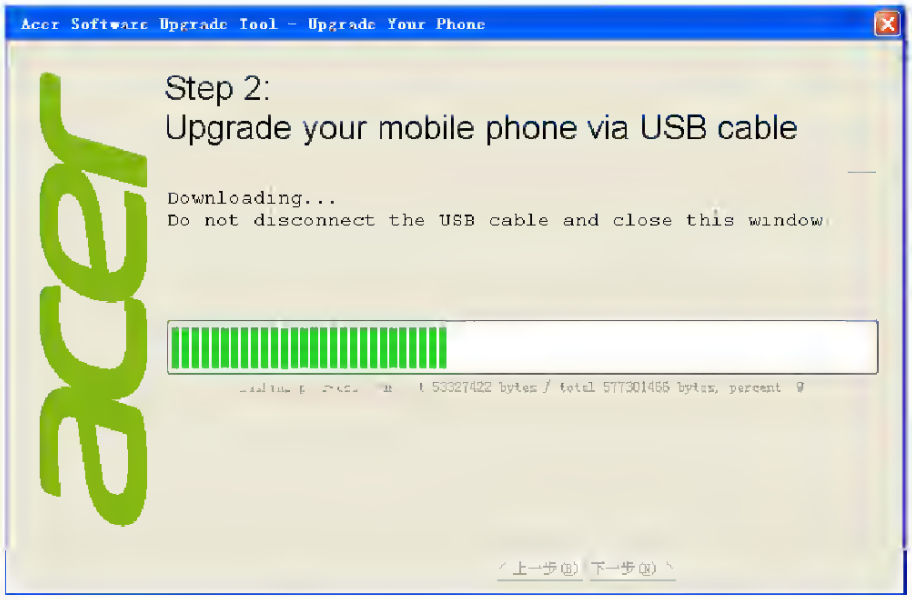
(3.)Click “下一步” button, the PC will display “Initialize Parameters successfully” and “Please connect your mobile phone”, then please connect your mobile phone, PC display began to automatic upgrade.




Acer Software Upgrade Tool - Upgrade Your Phone
Step 2:
Upgrade your mobile phone via USB cable
Downloading...
Do not disconnect the USB cable and close this window
上一步(B)
下一步(N)

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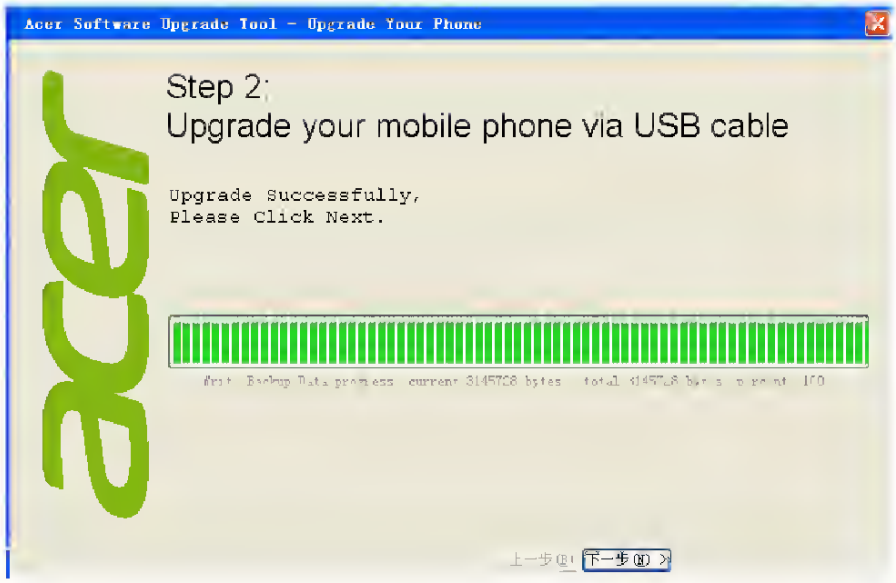
(4.) You will see the picture below when software updates successfully


Acer Software Upgrade Tool - Upgrade Your Phone
Step 2:
Upgrade your mobile phone via USB cable
Upgrade Successfully,
Please Click Next.
下一步(N) >

(5.) Click "完成"button, then software upgrade is complete.

Acer Software Upgrade Tool - Finished
Congratulations!
Your Acer phone has been upgraded.
You can disconnect the USB cable,
remove the battery, and place it back.
Long press the Power button to turn your phone on.
完成

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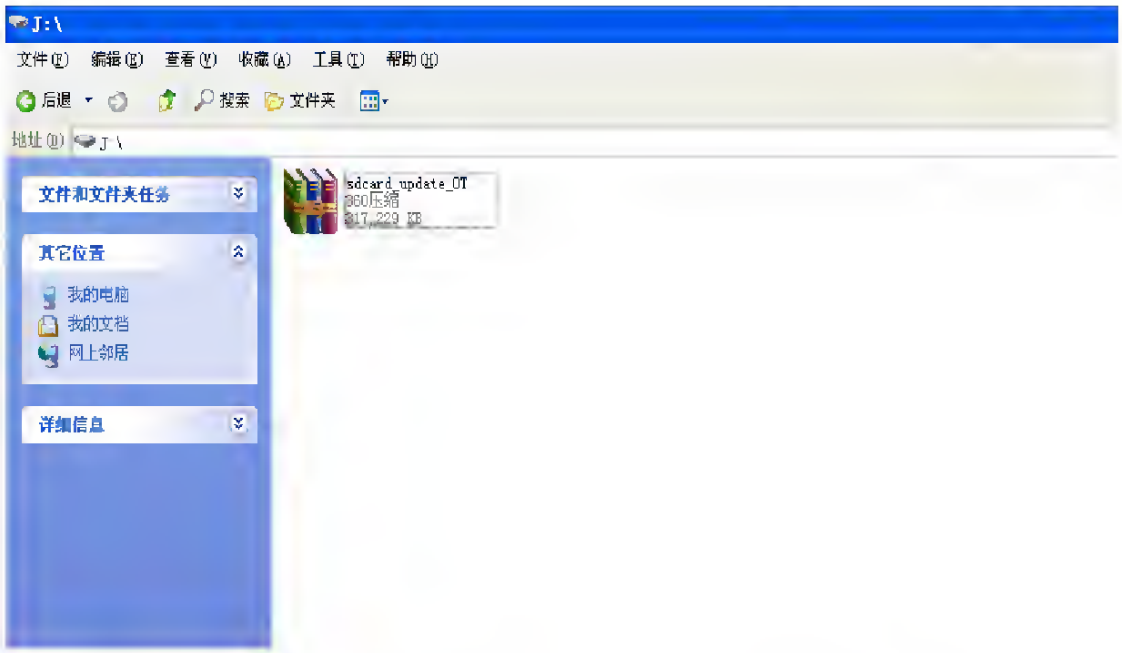
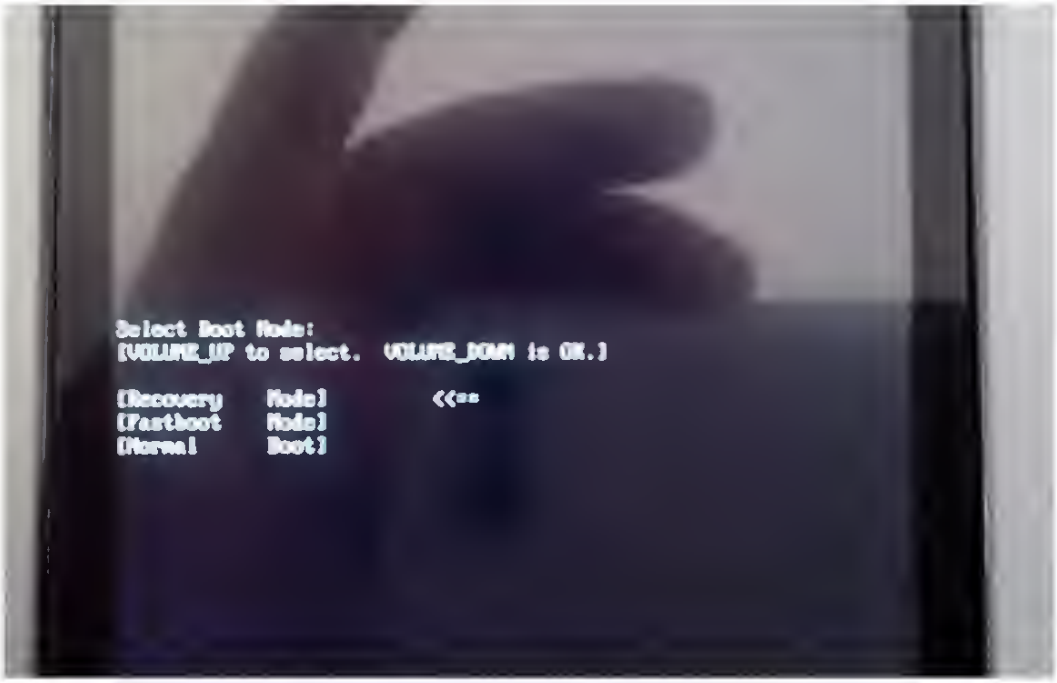
6. **SD card download guide.**

1.Copy the" ZIP" files to the root directory of SD card, then put SD card into its slot. Be sure have space enough in SD which is twice of space of "ZIP" files at least, or maybe download failure.



2.Under the status of power-off, first press down the volume-up key then than press down the power key till going into "recovery mode", as you see the interface like picture below means into "recovery mode"



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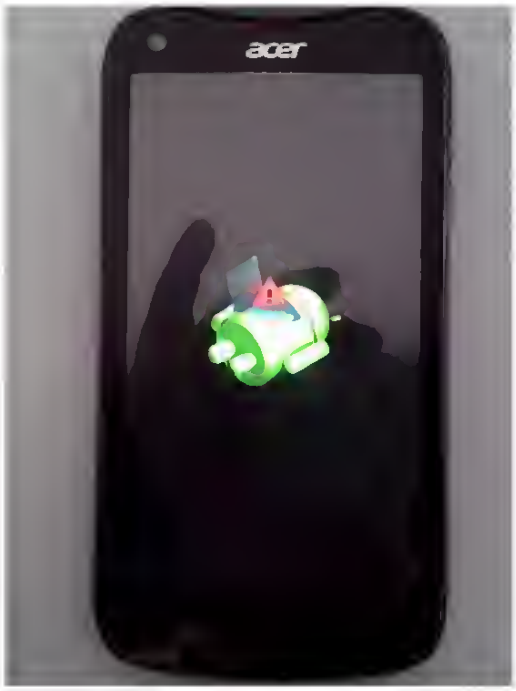
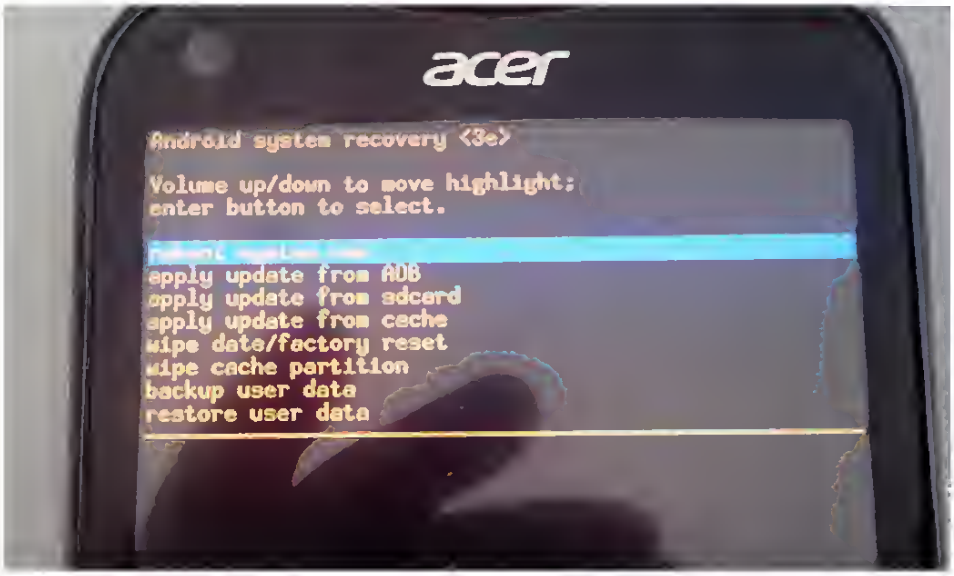
3. At the time of picture above, press volume-down key, go on the next interface like the picture below.



4. Press the power key go on the next interface.



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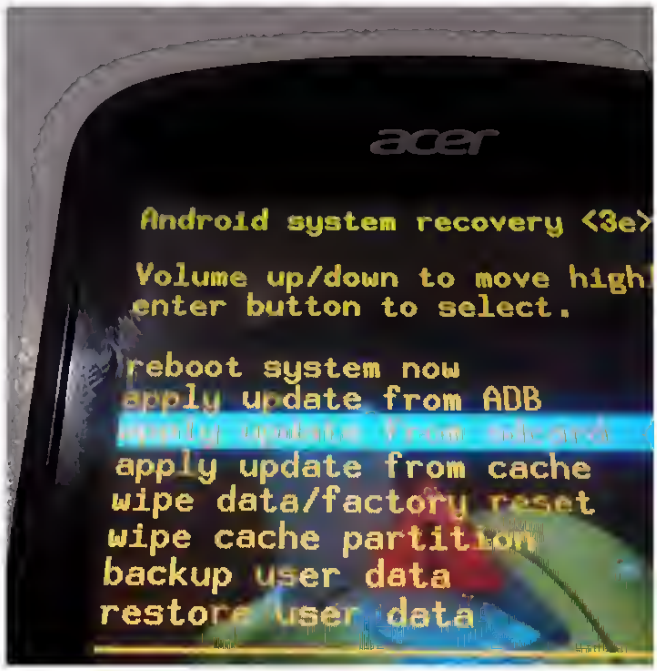
4.Press the volume-down key till the fourth row show the blue background---"apply update from sdcard"



5. Press the volume-up key and go into the interface like the picture below, then choose the "sdcard_updateAcer_AV061_v370_1.000.02_WW_GEN1.ZIP" pressing the volume-down key into next step。

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6. Press the volume-up key and go into the interface like the picture below.

7. Complete download.

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8.After downloading success, the screen will show "Install from sdcard complete", if not, means failed. Please record the language tips, had better take pictures for engineer to debug. When succeed, choose "reboot system now" to restart. Rebooting completed is OK.

- Common causes of failure to upgrade:
  A. Use wrong files to upgrade, for example, use others models software. Measures: use correct files.
  B. When copy original files from computer to SD card, anti-virus software maybe break some internal files or SD card is defective, lead to upgrade package copied be different from the original package(use tool for contrasting or contrast md5 can recognise , verifying files failure in the process of upgrading lead to upgrade failure.

  Measures: delete the software package in the SD card, recopy again to try or change another SD card , copy original package again to retry.

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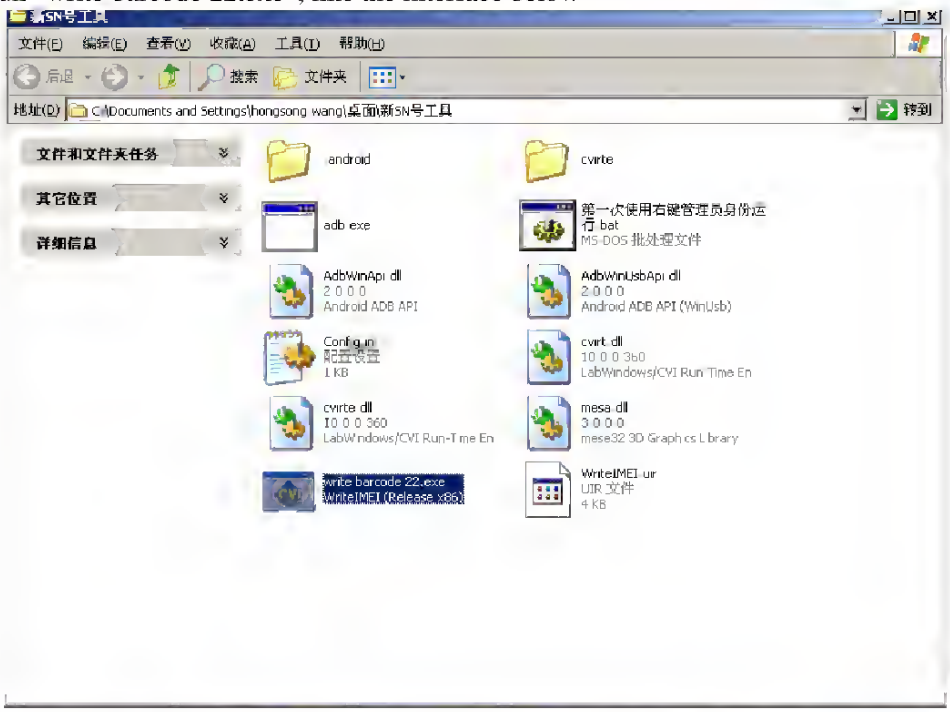
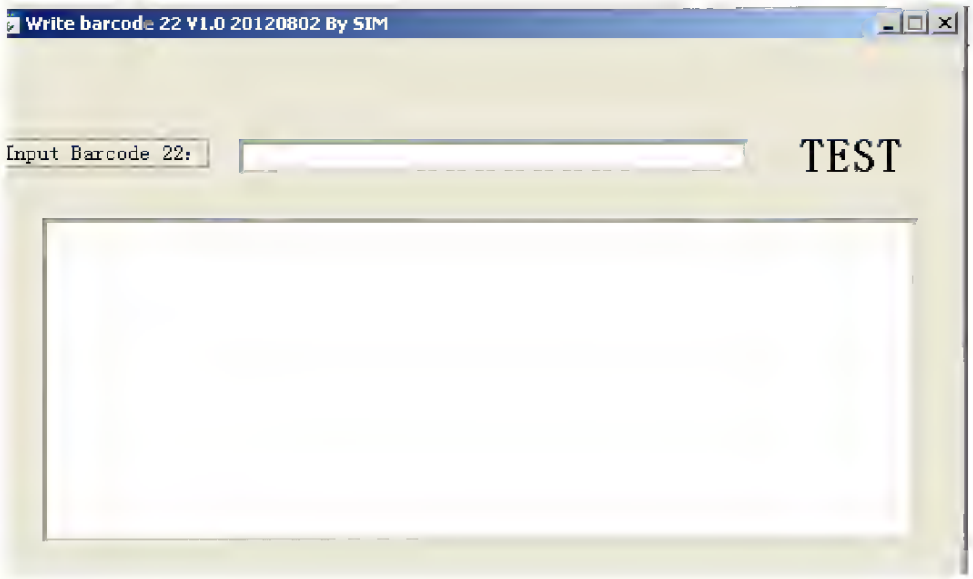
7. Writing SN NO.

（1.）Run “write barcode 22.exe”, like the interface below





（2.）Input 22 pieces SN .NO in the blank , as picture below.

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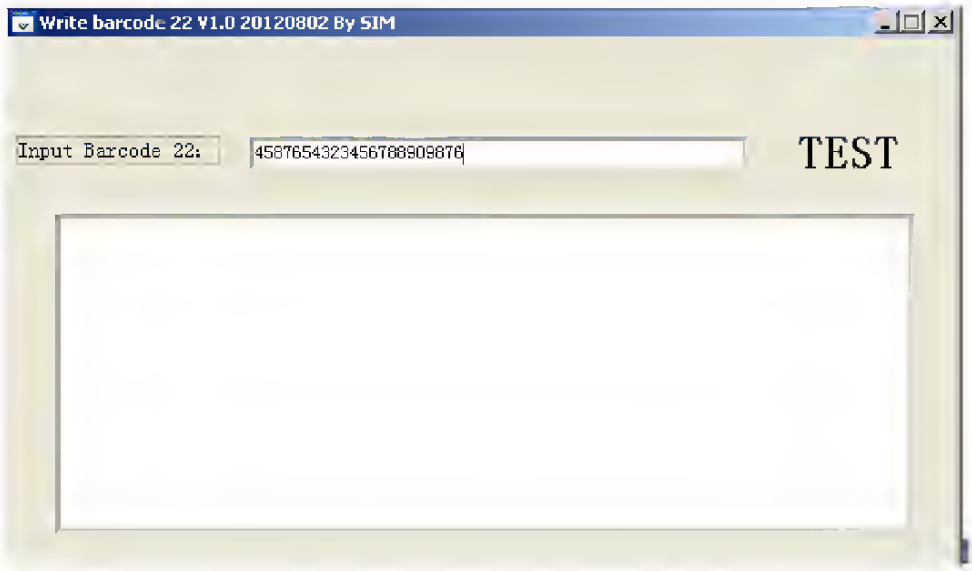
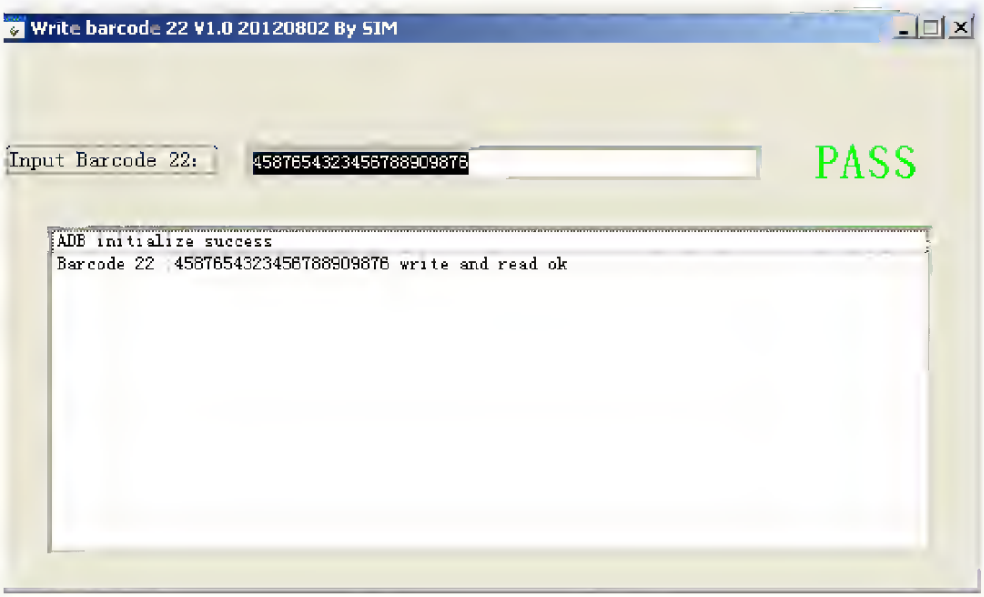


（3.）Inputting ok, press “enter”, then green “pass” will be displayed on the interface after seconds, means success!



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8. cess of Assemble and Disassemble

Tools

a. Tweezer

b. Cross Screwdriver

c. Plastic Bar

Process of Assemble

一、 Take battery cover away

According to the pictures below，rasie up from the gap，open this side first, then another.

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二、 Disassemble the battery

According to the pictures below，raise up from the slot sign，then take it out。

三、 Disassemble the bottom cover

（1.） Using the cross screwdriver，disassemble the 8 screws of picture marked，using plastic bar to insert the gap between top cover and bottom cover down the four sides, and take it。

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（2.）like the picture below after taking bottom cover away。

（3.）taking the power key and volume key from the bottom cover away.

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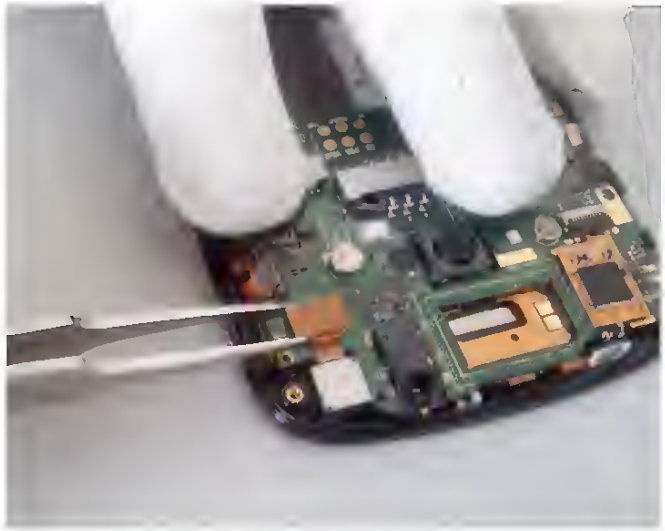
四、 Disassembling the Mainboard

(1.)Take away front camera's B-B connector , as picture below。



(2.)Opening the connector，take out the FPC of TP，Watch out breaking the FPC by the tip of tweezer, as the picture；

(3.)Open the ZIF connector，take FPC out by tweezer like the picture. Watch out breaking the FPC by the tip of tweezer。

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(4.) Open the LCD ZF connector, like the picture.

(5.) Take away sidekey's FPC from the top cover, take care of having the double-sided tape between FPC and the cover. As picture below.

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(6.) Raise up the mainboard from the top of the phone till about 90 degrees , the top means approaching the volume key.

(7.) Open the FPC connector, As picture below.

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(8.) Take away main board from front housing, as the picture.

(9.) Take away camera's B-B connector , as picture below。

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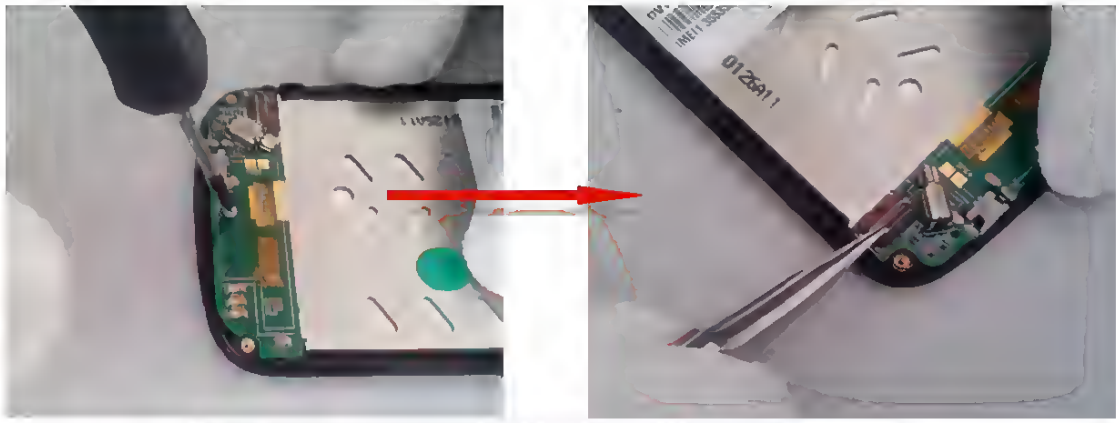
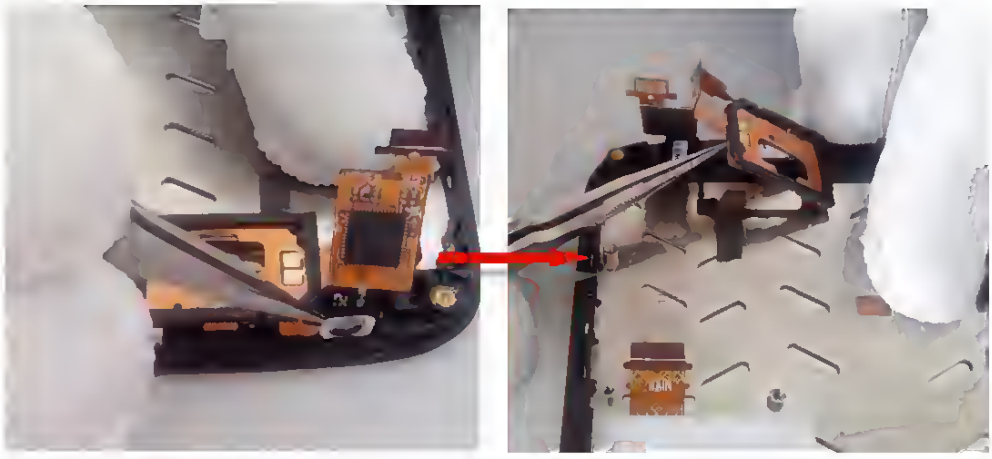
(10.) Taking out the FPC of the sub board like the picture .



五、 Disassemble the receiver

1. Raise up the FPC from the front housing till about 90 degrees , as the picture.



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2. Take out the receiver from the housing.

Unless necessary，please do not disassemble TP、LCM。It is very easy to break them.
All disassembled parts as picture below.

Process of assemble

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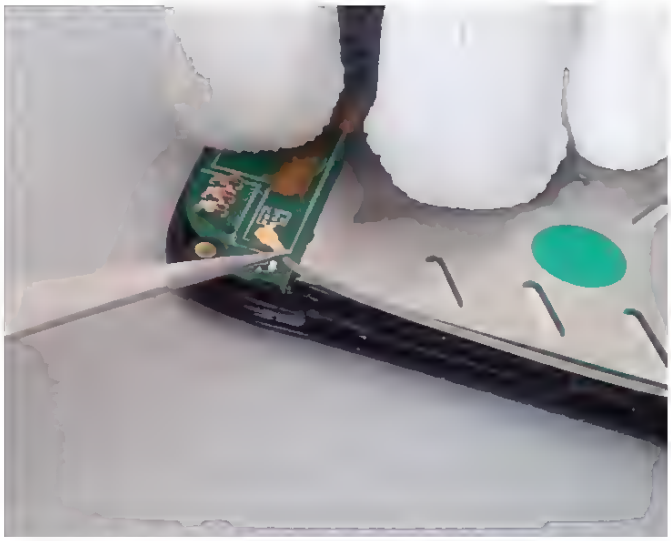
一、Assemble SUB board.

（1.） Fasten the SUB board on the front housing, then put FPC into the ZF connector and tighten the screws.

(2.) set the coaxial cable，take care of the fixed position on the right side 。



（2.）set tow speaker into fixed position in the rear housing, but with one important note ,the orientation of speakers, please following the below picture.

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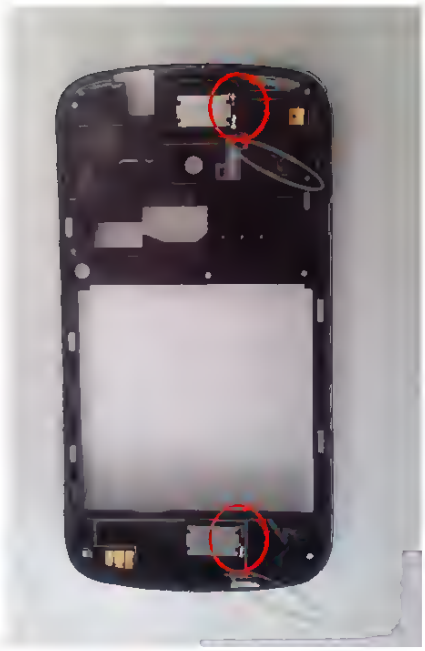

Put receiver into the fixed slot , according to the direction of the receiver in the picture。

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五、assemble the main board

（1.）firstly fix sensor FPC.

Change new sponge

Fix the power key

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（2.）Insert the FPC of sensor FPC into the ZIF connector.

(3.) Put the main board well ,assemble the 3 ZIF connectors ,as picture below。

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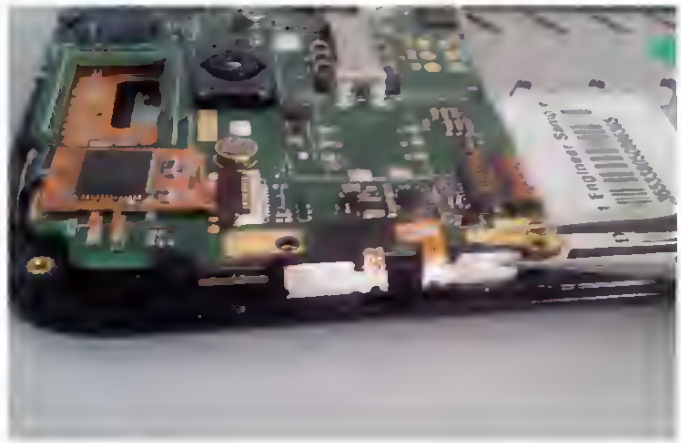
(4.) Fix the coaxial line with the main board.

(3.) Fix the volume key with the front housing.



（3.）Snap the front camera's connector, like the picture.

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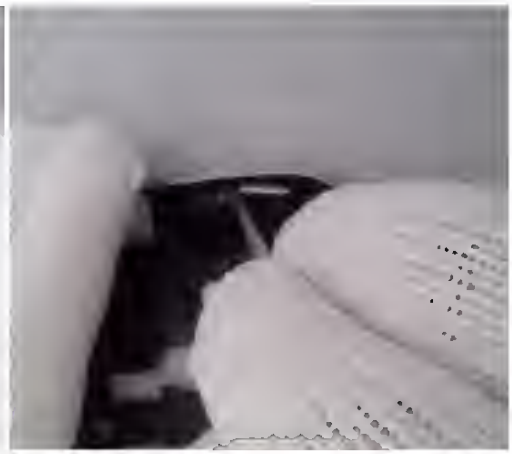
六、 Assemble the rear housing

(1.) Fix the volume key and power key.

Fix the volume key



Fix the power key

(2.) Assemble the rear housing and tighten the screws

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八、Insert the battery and cover the battery cover。

The process of assemble is over.

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9. Test ways and steps

1. **Insert T-card , sim card and battery into the phone, then power on. The power-on flash must be normal fluent. When the phone stand by, check whether it reads the sim card and T-card. insert an earphone, listen to music, the sound should be clear and no any noise, the key light will be on at the same time.**
2. **Dial "10086", check the sound of the receiver, then active speaker, check if the speaker's voice is clear and has no any noise.**
3. **CIT TEST**

Click the "dial key", input "*#889#"into the CIT test mode, choose "PCBA auto function test"

a. **Version test: shown SW version, HW version and BB version and so on, please in comparison with the plan book. No differences, click "succeed" into next item.**

Check the phone has read the sim1, sim2 and T card, speaker can make sound, click "succeed" into next item.

b. **Camera Test:into the interface, look if the image is clear. Click "back" into next interface that shows two choices, "succeed" and "fail". Click "succeed" into the next item.**

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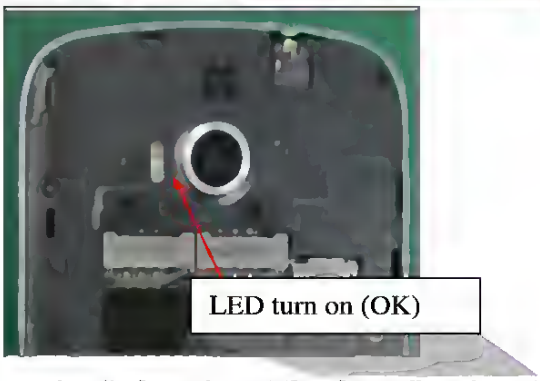

c. **Charge test: appearing " please insert the charge", as insert the charge, the interface will show " the charge has been inserted' and the current , the charge LED will be on, the program check automatically "pass" or "fail". If the current is out of the range of demand, the "succeed" will be dark. Or click "succeed" into next item.**

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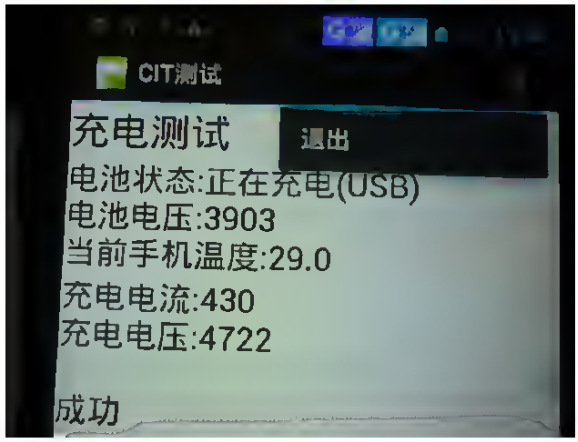

d. **Receiver and microphone loopback test: go into the interface, speak towards the microphone, the voice will be heard from the receiver. Then two choices----"pass" and "fail", choose anyone the phone will record the result.**

e. **Keypad Test: go into the interface, press the volume down ,volume up, home, menu, back and the key of earphone, corresponding key's background will be change at the same time. If no operates occur, the "succeed" show darkness. Click "succeed" into the next item.**

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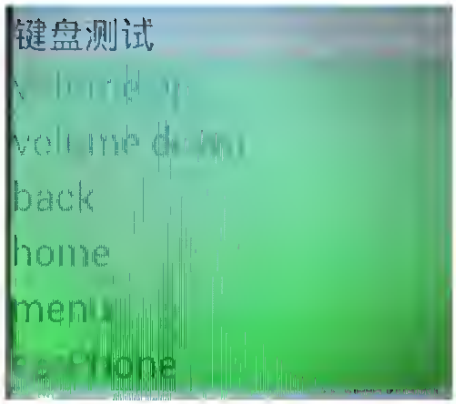
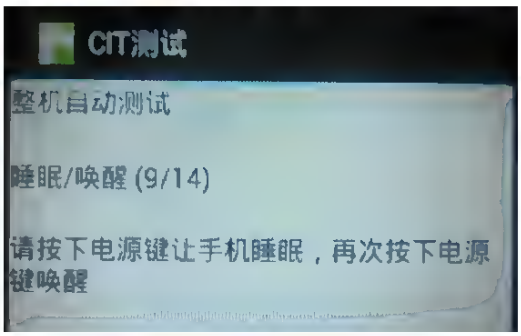


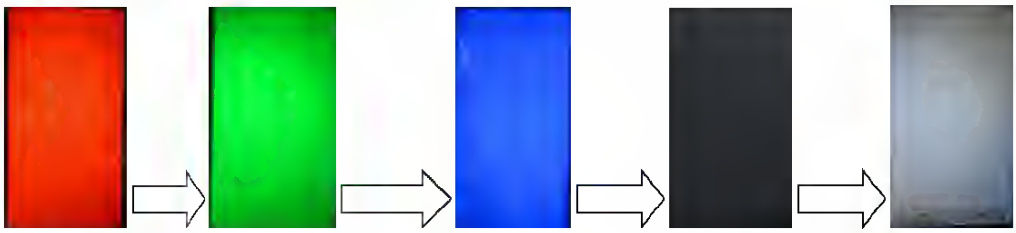
f. **Sleep& wake test: press "sleep/wake" , press the power key into the sleep mode, press power key again and wake the phone, unlock it. If do not do it, the "succeed" will be dark. Click "succeed" into the next item.**



g. **LCD test:**

Go into the interface, LCD display white, red, green, blue, and black lasted 1 second each colour, then two choices "pass" and "fail", whatever you choose, the phone will record the result.

LCD backlight test: the lightness will change with shifting of the movable rail.



h. **FM test:**

Go into the FM interface, tune 98.5MHZ, can hear clear broadcast. If not, the "succeed" will be dark. Click "succeed" into the next.

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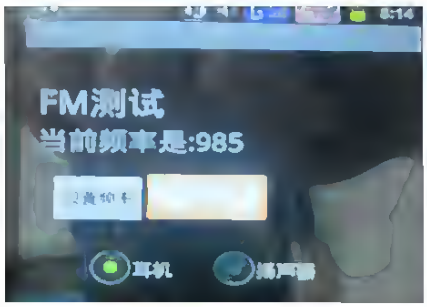
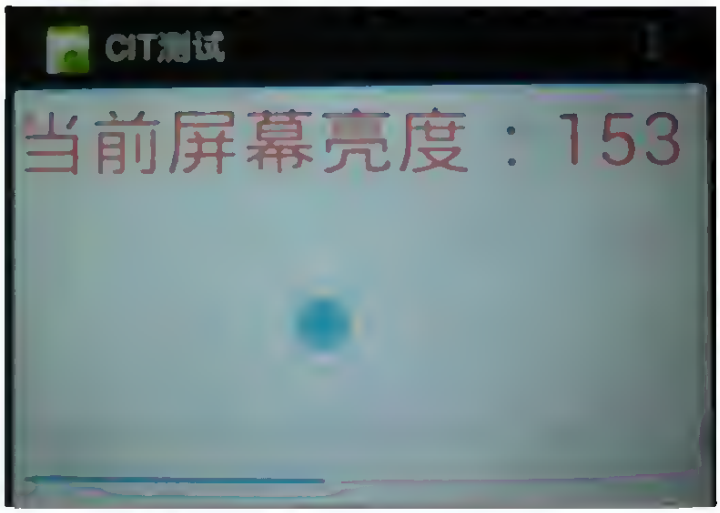
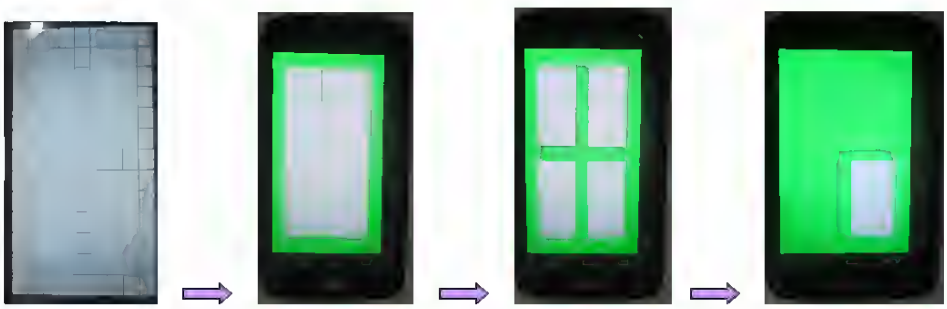


i. **Keypad light test: go into the test interface ,the screen gets darker, the keypad light will light. Click "succeed" into the next.**



j. **TP test:**

Go into interface, draw frame lines and cross lines, then click four small squares,. All is over. TP is OK . Automatically go on the next.



k. **Vibrator test:**

Go into the interference, check it vibrates, lasting 2seconds, stop 1 second, then vibrates again in turn. Click "succeed" go on the next.

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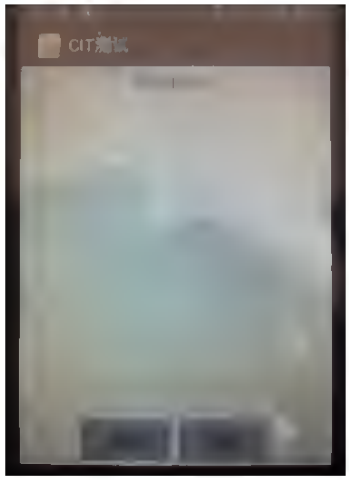
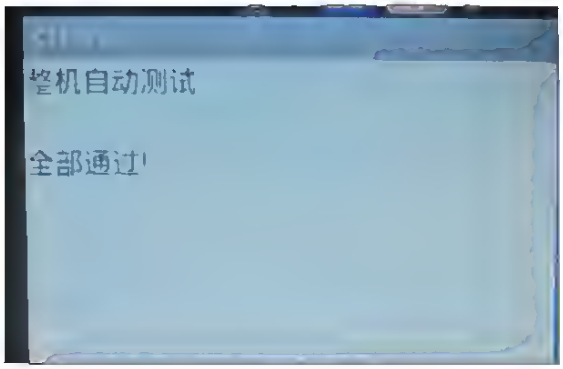


All passed, as good on the line.



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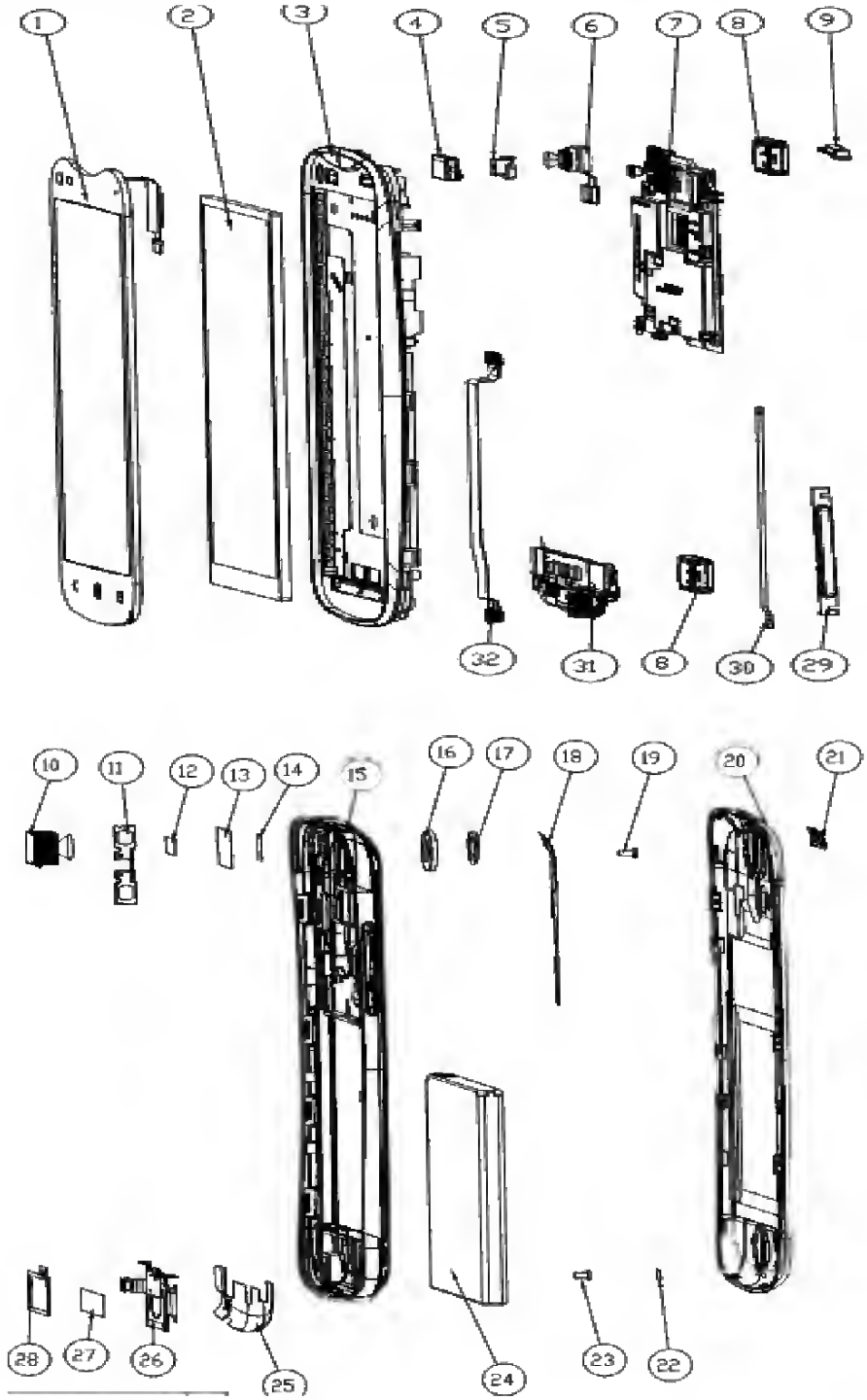
10. Exploded View



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Number	Describe	Dosage	Number	Describe	Dosage
1	TP	1	15	C11M_RH--ASM	1
2	LCD	1	16	C11M_Camera_Deco	1
3	Front bousing	1	17	C11M_Camera_Lens	1
4	Receiver	1	18	GPS 3 in 1 Antenna	1
5	Light_Rubber	1	19	M-M1.4 H30 screw	8
6	Front camera	1	20	C11M--Battery_Asm	1
7	Main_Board	1	21	Acer LOGO	1
8	Speaker	2	22	Seal Label	1
9	Power_key	1	23	T-M1.4 H25 Screw	1
10	Main_Camera	1	24	Battery	1
11	Volume_key FPC	1	25	Main Antenna	1
12	Main_Board_FPC_Conn_mylar	3	26	Receiver Speaker FPC	1
13	SIM_mylar	1	27	C11M Test Malay	1
14	Volume_key FPC malay	1	28	C11M main speaker sponge	1

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11. Device Label

C11 Label for Handset System Device Label (GENERIC)

For Generic Sku

(A) Label made by vendor

Material: 双层离型铜版纸 光面

Printing: Black \ Yellow

Size:58.2X58mm

PN:S00030720640

工厂打印后:

DUO SIM

Single SIM

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C11 Label for Handset System Device Label (TW)

For Taiwan Sku

(A) Label made by vender

Material: 双层离型铜版纸 光面

Printing: Black

Size:58.2X58mm

PN:S00030720654

工厂打印后:

DUO SIM

Single SIM

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C11 Label for Handset System Device Label (FRA)

For France Sku

(A) Label made by vendor

Material: 双层离型铜版纸 光面

Printing: Black \ Yellow

Size:58.2X58mm

PN:S00030720640

法文翻译:

Jan–jan
Feb–fév
Mar–mar
Apr–avr
May–mai
Jun–jun
Jul–jul
Aug–août
Sep–sep
Oct–oct
Nov–nov
Dec–déc

工厂打印后:

DUO SIM

Single SIM

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C11 Label for Handset System Device Label (TH)

For Thailand Sku

(A) Label made by vendor

Material: 双层离型铜版纸 光面

Printing: Black \ Yellow

Size:58.2X58mm

PN:S00030720640

工厂打印后:

DUO SIM　　Single SIM

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C11 Label for Handset System Device Label (ID)

For Indonesia Sku

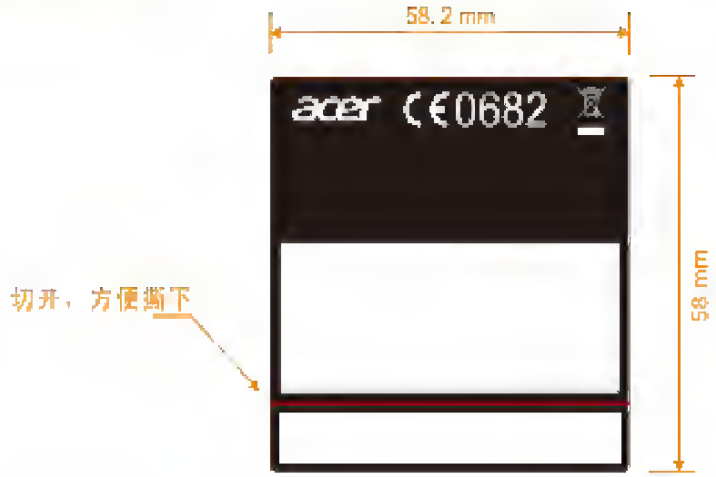
(A) Label made by vendor

Material: 双层齿型铜版纸 光面

Printing: Black

Size:58.2X58mm

PN:S00030720655



工厂打印后:

DUO SIM

Single SIM

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C11 Label for Handset System Device Label (ML)

For Malaysia Sku

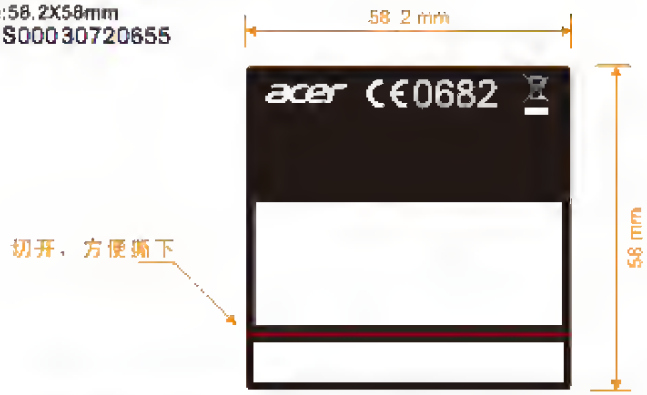
(A) Label made by vendor

Material: 双层离型铜版纸 光面

Printing: Black

Size:58.2X58mm

PN:S000307206S5



工厂打印后:

DUO SIM　　Single SIM

(B) Label made by vendor

Material:

Printing:

Size:20.0mmX10.0mm

PN:

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C11 Label for Handset System Device Label (PHI)

For Philippines Sku

(A) Label made by vendor

Material: 双层卤型铜版纸 光面

Printing: Black

Size:58.2X58mm

PN:

工厂打印后:

DUO SIM　　Single SIM

Code 編碼說明

Acer 22 Code SN : PPPPPPPPPPYWWSSSSSMMVV
PPPPPPPPPP : Acer PN
YWW : 3 numeric of Year & Week code
SSSSS : 5 unique hexadecimal code , by manufacture base & reset each week (0-9,A,B,C,D,E,F 16 Code)
MM : manufacture code
VV : Eng Version code
Acer SNID : YWWdddddd MM
YWW : 3 numeric of Year & Week code
ddddd : 6 unique decimal number transfer from **SSSSS** of Acer 22_Code_SN
Transfer rule for S1 S2 S3 S4 S5 :
Ddddd = S1 * 164 + S2 * 163 + S3 * 162 + S4 * 16 + S5
001FD → 000509 (= 1 * 162 + 15 * 16 + 13)
MM : manufacture code (same as above MM)

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12. FRU list

Accessories	Description	Material coding
	Battery	China: Other.KT.0010J.007
	Charger	EU KP.0050S.002 US KP.0050S.001 UK KP.0050S.003
	Earphone	HC.70211.00K
	USB	HC.70211.00N

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Main housing	Description	Material coding
	Front housing assembly	Black: 6M.HC5H7.001 White: 6M.HC7H7.001
	Rear housing assembly	Black double SIM: 60.HC5H7.001 White double SIM : 60.HC7H7.001 Black single SIM: 60.HC6H7.001 White single SIM: 60.HC8H7.001
	Battery cover	Black: 60.HC5H7.002 White: 60.HC7H7.002

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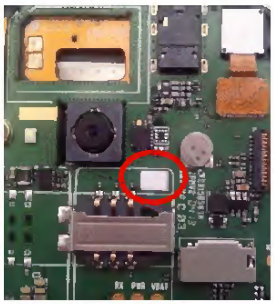
Labels class	Description	Material coding
	Device label	WW:47.HC5H7.001 TW: 47.HC5H7.002 Malaysia/Indonesia: 47.HC5H7.003
	Seal label	47.HAKH7.019
	WATER PROOF	47.HBFH7.003

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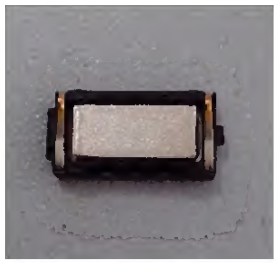
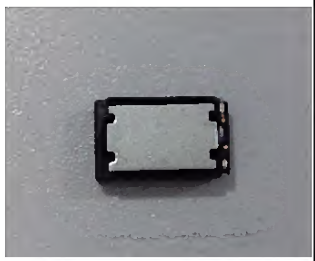
Part	Description	
	Receiver	60.HC5H7.003
	Speaker	23.HC5H7.001
	Mainboard	Double SIM:HB.70511.014 Single SIM: HB.70511.015
	SUB board	55.HC5H7.001

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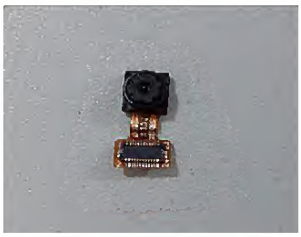
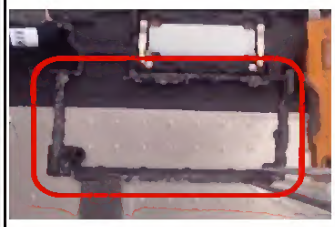
	Front Camera	KR.02M0B.001
	Main Camera	KR.08M02.001
	P-sensor FPC sponge	47.HC5H7.004
	POWER KEY	Black :42.HC5H7.001 White: 42.HC7H7.001
	Volume key	Black:42.HC5H7.002 White:42.HC7H7.002

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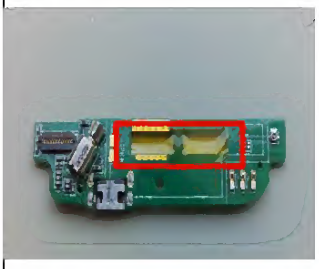
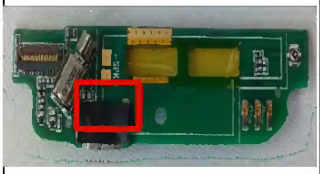
	SCREW 4	86.HAKH7.001
	SCREW 1	86.HC5H7.001
	SUB board MALAR	47.HC5H7.005
	USB MALAR	47.HC5H7.006

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